

SUMMARY

The Department of Public Works, Water Reclamation Division, is budgeted in the Water and Sewer Operating Fund. The Water and Sewer Operating Fund is an Enterprise fund, therefore, it is managed and financed in a manner similar to a private business enterprise and is fully supported from user fees and charges. The purpose of this fund is to cover the operation of the County water and sewer systems.

We reviewed the Division of Water Reclamation to determine the efficiency and effectiveness of internal controls and operational policies of the division. We focused on two areas under this division: the sludge hauling contract and the County surcharge to non-residential public sewer system users that have excessive pollution concentrations.

A new Sludge Hauling contract has recently been approved. We reviewed that contract and recommended several items relating to the terms and formulas in that contract be monitored and modified when the contract is eligible for renegotiation.

Concerning the County surcharge for public sewer users with excessive pollution concentrations (such as restaurants), we found that the list of users was last updated in August 2000. We determined that 87 additional users should have been added at an estimated loss to the County of \$316,479. We also determined that 57 users should have been subtracted at an estimated overcharge from the County of \$208,413. We also noted some establishments were being charged the fee but were not in the food business. We recommended that the list of users be immediately updated and the Office of Law determine if these establishments could be billed for the lost fees and what reimbursement options may exist for those establishments overcharged.

SCOPE

The Office of the County Auditor has performed a review of the Department of Public Works, Water Reclamation Division. The purpose of the review was to determine the efficiency and effectiveness of internal controls and operational policies of the division.

BACKGROUND

The Division of Water Reclamation is responsible for the maintenance and operation of wastewater treatment facilities and all water distribution/wastewater collection system facilities within Howard County with an approved budget of \$9.5 million and 40 employees. Present facilities include only the Little Patuxent Water Reclamation Plant, an 18 MGD advanced tertiary treatment facility. Tertiary treatment is the third stage of wastewater treatment, including filtration and disinfection, which removes up to 99.999% of pathogens and suspended solids. In addition, this Division is responsible for the pre-treatment program impacting the wastewater collection system and wastewater treatment facilities. Water Reclamation has four main areas: maintenance, operations, administration, and process protection and control. Maintenance is responsible for equipment repair and maintenance; building maintenance, grounds maintenance and water distribution/wastewater collections system facilities; i.e., pumping stations and water tanks, control valves and master water/sewer meters. Operation's is responsible for the operation, monitoring, and control of the primary, secondary, tertiary, and sludge disposal processes. Administration is responsible for the general administration of the Division, overall management of facility operations, project management of design and construction efforts, and outside treatment fees. Process protection and control is responsible for identifying and controlling all dischargers to the wastewater collection system (i.e., pre-treatment program) whose discharge may contain pollutants that would interfere with, pass-through or contaminate the sludge from the treatment plant. Also, they are responsible for providing laboratory support for the Division, providing overall support for controlling the various wastewater processes at the treatment plant, and providing engineering support for the division.

FINDINGS AND RECOMMENDATIONS

Sludge Process

In December of 1999, Howard County entered into a two-year contract, which subsequently had four six-month extensions with Synagro, a residuals management company, for the processing, hauling, and disposal of biosolids produced within the County. Projected FY 04 sludge wet ton landspread, or sludge disposal, is 22,550,000 wet tons. The FY04 budget for this contract is \$1,061,000.

To begin the process, the County processes biosolids on a belt to remove water to standards of 14%-25% solids. Then, Synagro takes over the process to convert the solids to Class B biosolids through a lime stabilization process. Next, Synagro hauls the Class B biosolids to a pre-determined field or landfill.

The old contract between Synagro and Howard County for the disposal of biosolids expired at the end of November 2003. In anticipation of this, Howard County obtained the help of the Northeast Maryland Waste Disposal Authority (NMWDA), a quasi-government organization that assists local governments in Maryland in providing adequate waste disposal authority. In April of 2003, NMWDA entered into a service agreement with Synagro for the removal of biosolids from Howard County. This contract was made with the understanding that Howard County would take the place of the NMWDA after the old contract between Synagro and Howard County expired. On December 1, 2003, Synagro and the County formally entered into this new contract to continue the processing, hauling, and disposal of biosolids. The new contract is different from the old contract in terms of how the biosolids will be processed (by centrifuge instead of a belt press) and what the end result will be (a Class A instead of a Class B biosolid). Based on a review of the contracts and discussions with Water Reclamation, we found several issues concerning both the new and old contracts.

First, the new contract anticipates that both Synagro and Howard County will receive revenues from the sales of Class A biosolids to diverse targeted markets. Marketing start-up costs are usually expensive; therefore, the County decided that shared revenue between Synagro and the County would be the best approach to maximize profits for the County under the new contract. The terms of the new contract state that Synagro will market, process, and distribute these Class A biosolids in a manner so as to maximize revenues and would be solely responsible for same. As a

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result of their efforts, Synagro would split these revenues with Howard County on a 50/50 basis. Howard County would then receive their revenue share as a credit against the service fee owed Synagro for their waste removal services. As revenue could potentially be quite lucrative in the future, we recommend that:

1. **The County negotiate and write the next five year contract in such a manner that it allows them the option of marketing the product themselves.**

Administration's Response:

The options to be considered after five years of contractual history will include marketing the product by the County. However, marketing expertise and capability were specific requirements sought by the County for the initial, current contract. Along with assessing the County's marketing capability, protecting the County from financial risk, while sharing in any revenues, must be evaluated for the future contract.

Secondly, the service fee formula in the new contract is dramatically different from the service fee formula in the old contract. The old contract service fee is a flat fee based on the processing, hauling, and disposal of the County biosolids per net ton. The new contract service fee incorporates a lower monthly processing fee with various additional fees including a transportation fee, lime fee, labor fee, pass-through costs, and potential uncontrollable circumstance and performance damages fees. According to Water Reclamation, the new service fee will result in significantly less fee per ton. However, with these various additional fees, there is also the potential for higher costs. Therefore, we recommend that:

2. **Water Reclamation perform a continuous cost analysis of the future fees based on the new contracts service fee formula and negotiate future or amended contracts accordingly.**

Administration's Response:

The Administration concurs with this recommendation. Water Reclamation will perform a continuous cost analysis of the future fees and negotiate future or amended contracts.

Finally, the old contract stipulates that the service fee will increase each year by the percentage in the Consumer Price Index (CPI). The old contracts service fee was \$48.76 per ton.

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This service fee did not change for the last three contract extensions. Over that same period of time, our review has indicated that the CPI changed each year. We therefore recommend that:

3. *Water Reclamation closely monitor and update the CPI as it relates to the new contract.*

Administration's Response:

Two indices are included in the new (now current) contract. The Consumer Price Index (CPI) and the Maryland Diesel Fuel Cost Index. These indices will be reviewed each July during the contract period.

Sewer Surcharge:

In June of 1987, Howard County established written procedures for the collection of a high strength surcharge from food service establishments (FSEs). The surcharge was to be applied to all non-residential public sewer system users that discharge sewage to the public sewer system with average daily pollutant concentrations exceeding one or more of the following limits: Biochemical Oxygen Demand (BOD)-300 mg/l, Suspended Solids (SS)-300 mg/l, and Phosphorus (P) -12 mg/l,” per section 20.606 of the Howard County Code. The 1987 procedures developed six classifications in which individually metered FSEs would be placed: (1) full service sit down@ restaurants, (2) fast food outlets, (3) places such as schools and hospitals that prepare food-on-site, (4) non-surcharged entities where wastewater discharged is essentially of domestic quality, (5) establishments which prepare and serve food on an intermittent basis such as churches, and (6) establishments which prepare baked goods and candy for retail sale. Tests were then performed on samples from categories 1,2,3, and 6 to develop standard surcharge rates based on average daily pollutant concentrations that could then be applied to the volume of water used at each FSE. For those FSEs that share metered water usage, a per-seat basis calculation was performed to come up with a surcharge rate for that individual FSE. Also, there are currently three industrial FSEs are food-processing plants that have significantly high surcharges and, because of this, they test themselves and they are also tested by Howard County to develop a quarterly or semi-annual average of pollutant concentrations.

For FY 2004, \$310,000 was budgeted as revenue from the sewer surcharge. Currently, 213 food service establishments (FSEs) are billed by the Finance Department for this sewer surcharge. As the sewer surcharge is directly tied to the FSEs water bill, the Water and Sewer Department monitors all accounts and payments. Any accounts that are determined to be delinquent will have their water shut off. We found several improvements that are needed as a result of our analysis of the surcharge process.

First, the formula detailed in section 20.606 of the Howard County Code has been converted in order to calculate the applicable surcharge for each FSE (except for the three industrial FSEs, which are tested using the exact formula from the Code). The formula to calculate the FSEs has been converted so that the factor creates a rate per unit of water (748 gallons). Since Howard County bills FSEs by unit of water, it becomes necessary for the formula to be converted. Another conversion of the formula is to negate the calculation of phosphorus and,

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therefore, this part of the equation was not necessary, as it would always result in no additional charge. As these studies were performed over 15 years ago, we recommend that:

4. *Water Reclamation perform retesting on a sample basis to ascertain if the current formula methodologies are accurate and the levels are as expected.*

Administration's Response:

The Administration concurs with this recommendation. Although certain tests are performed regularly, a comprehensive methodology calibration is desirable.

Second, the listing of FSEs that are currently charged does not include some new restaurants in the County. A listing provided by Water Reclamation of all restaurants in the county that have grease traps and the corresponding surcharge classification for each, totals 243 FSEs for classifications 1,2,3, and 6. To verify this total, we reconciled listings from various databases that included the Water and Sewer Billing System, Health department, Cornerstone system permits maintained by the Department of Inspections, Licenses and Permits, and inspectors in Water Reclamation. As a result of this review and discussions with Water Reclamation, we have identified that the FSE listing is only current as of August 2000, and has not been modified since then. Some locations that were listed on the FSE Listing did not actually have a restaurant at that location. Two examples of this included a Blockbuster and Rite-Aid with no food service preparation being surcharged. Also, various schools and senior centers that do not prepare food on site, but have food brought in from local high and middle schools are being charged this surcharge. Of the 13 schools that prepare food on site, only 6 of them are correctly being surcharged. Seven of them are not being charged, while seven other schools are being charged instead. Although, the correct number of schools is being charged, the surcharge relies on the volume of water used, therefore, the correct school should be charged in order to assure the accuracy of the surcharge amount. By our calculation, 87 additional FSEs should have been charged and 57 non-chargeable FSEs should have been subtracted at some point during the three-year period. Based on the percentage of additional FSEs to the total FSEs (41%) and non-chargeable FSEs to the total FSEs (27%) we calculate that approximately \$127,100 per year in revenue was uncharged, and \$83,700 overcharged as a result of the listing not being updated. Based on the net amount of overcharge and undercharge, we calculated that approximately \$7,400 per year in revenue would have been

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paid to Baltimore County for surcharges related to the Patapsco processing plant. Total uncharged fees, minus the Baltimore County fees, amounts to \$316,479 over three years. Total overcharged fees, minus the Baltimore County fees, amounts to \$208,413 over the three years. As these calculations do not take dates into account, \$316,479 and \$208,413 are the maximum amounts that would have been over or undercharged based on the percentage of additional and non-chargeable FSEs. Since the listing of FSEs that are currently billed did not accurately match up with those restaurants that should be surcharged from the Restaurant Listing, we recommend that:

5. **Water Reclamation immediately subtract the non-chargeable FSEs and add the new FSEs to the surcharge billing system.**

Administration's Response:

The Administration concurs with this recommendation. Immediate steps have been taken to have an up-to-date listing that is the basis for both regulation and billing responsibilities. The actual discrepancy has been calculated vs. estimated and will be used in accomplishing recommendation #6. Although the audit used a conservative estimate of \$316,429 as lost revenue, the actual calculation is \$44,794. A large factor being that the 87 additional users had, in fact, only 30 FSEs eligible for surcharge billing. The largest non-surcharged accounts are:

Copeland's of New Orleans
My Way Restaurant
Bennigan's @ Snowden River Parkway

The \$22,588 from those three FSEs were half of the unbilled total. This substantiates the worth of maintaining a written process and procedures (Recommendation #7).

Auditor's comments:

We were informed that the administration calculated the forging figures by utilizing the grease trap listing and older surcharge listings, and by performing a "windshield" (drive by) survey within the Little Patuxent service area. Not included in the lost revenue calculation that was previously estimated by the Auditor's office were all County FSEs including high water consuming County schools. Water Reclamation did not perform a lost revenue calculation for the Patapsco service area. Currently, Water Reclamation is working to review and verify existing records to calculate the actual undercharge and over charge amounts. We agree that this will provide the most accurate required adjustment figure.

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6. *Water Reclamation consult with the Department of Finance and the Office of Law to determine the feasibility of billing for the uncollected revenue from these missed surcharges and for reimbursement options for those restaurants overcharged.*

Administration's Response:

The Administration concurs with this recommendation. The feasibility and method for collection and reimbursement are being studied.

Lastly, as noted above, the listing of FSEs being surcharged has not been updated or maintained

in the past 3 years. Currently, we are unaware of any written policies and procedures detailing the methodology of updating the FSE listing. Therefore, to ensure that in the future this listing is updated timely and accurately, we recommend that:

7. *A written process and procedure be developed that assures a systematic methodology for adding, deleting and maintaining accounts pertinent to FSEs and associated surcharges.*

Administration's Response

The Administration concurs and the Department of Public Works is developing a written procedure to maintain accounts pertinent to FSEs and the associated surcharges.

8. *The Bureau of Environmental Health and Inspection, Licensing and Permit coordinate efforts with Finance for updating the billing list.*

Administration's Response:

The Administration concurs and will explore the feasibility within the management system being developed both in Inspections, Licensing and Permits and Public Works. The Bureau of Environmental Health has agreed to furnish quarterly listings of FSEs to Public Works.

